Data Communications Company

SEC Modification Proposal, SECMP0066

Advanced Shipment Notifications (ASN) for Consignment of Communications Hubs

Preliminary Impact Assessment

Version:	**0.4**
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1 Document History

1.1 Revision History

Revision Date	Revision	Summary of Changes
19/06/2019	0.1	Initial feedback to SECAS
24/09/2019	0.2	Updates following Service Provider and DCC feedback. DCC review
1/10/2019	0.4	Released following DCC review

1.1 Associated Documents

This document is associated with the following documents:

Ref	Title and Originator's Reference	Source	Issue Date
1	SECMP0066 Initial Modification Report	SECAS	24/06/2019

References are shown in this format, [1].

1.2 Document Information

The Proposer for this Modification was James Nixon of Scottish Power. The draft proposal was submitted in November 2018.

The Preliminary Impact Assessment was requested of DCC in June 2019.

1.3 Document Purpose

The purpose of this Preliminary Impact Assessment (PIA) is, where feasible, to provide an outline solution design, Rough Order of Magnitude costs for Design, Build, and Pre-Integration Testing, and finally cost to complete a Full Impact Assessment (FIA).

2 Context and Requirements

Currently, the DCC must offer a Party that has ordered a Consignment of Communications Hubs a minimum of two working days' notice that an Advanced Shipment Notification (ASN) for that Consignment is available via the Order Management System (OMS).

The Modification proposes to amend SEC Appendix H 'CH Handover Support Materials' to increase the minimum notice that DCC must offer a Party regarding ASN's for the Consignment of Communication Hubs.

2.1 Problem Statement

Currently, the DCC must offer a Party that has ordered a Consignment of Communications Hubs a minimum of two working days' notice that an Advanced Shipment Notification (ASN) for that Consignment is available via the Order Management System (OMS).

Suppliers must update Communication Hub asset data onto the password protected DCC Smart Meter Inventory (SMI); a process that cannot readily be automated. The minimum two-day notice period established in the SEC is, therefore, insufficient, in the Proposer's view, to reasonably allow the efficient processing of this data onto the SMI. This has led to an unacceptably high incidence of delivery refusals which drive up the costs of Smart Metering Implementation. The Proposer's operational experience suggests that 48 hours' notice is too narrow a window for installation and logistics partners, which is significantly increasing the risk of delivery refusals.

2.2 Requirement

The business requirement is as follows.

Requirement 1	The DCC will provide the cost implications relating to increasing the notice period between issuing the ASN and the actual delivery of the Communication Hubs from 2 days to 4, 6, 8 and 10 days. This will provide greater clarity on how the costs escalate through the extended notice periods.

The Working Group understand that there is the possibility of increasing the notice period by a small amount with minimal cost, but as the notification period increases the costings rise, therefore we are looking for a maximum increase in notification period with minimal cost. For that reason SECAS have requested information on extended notifications of 4, 6, 8 and ten days.

3 Description of Solution

This Modification proposes to amend SEC Appendix H to stipulate that where a Party has ordered a Consignment of Communications Hubs, the DCC must offer that Party a minimum of 10 Working Days' notice that an Advanced Shipment Notification (ASN) for that Consignment of Communications Hubs is available via the Order Management System (OMS).

The proposer believes this arrangement will provide Suppliers with enough time to update Communication Hub asset data onto the Smart Meter Inventory (SMI), as well as reducing the number of delivery refusals and in turn aiding in the reduction of overall costs of Smart Metering implementation.

Changing this part of the SEC will impact the logistics arrangements for provisioning Comms Hubs for Communications Service Providers (CSPs) and Service Users as well as business support systems at the CSPs and DCC.

3.1 DCC Understanding of the Situation

Pallets of Communications Hubs (CH) are stored on shelves in DCC Warehouses across Great Britain. Tags on the pallet are used to inform business supporting systems, including the Order Management Systems, when the system status changes. An Advanced Shipment Notification (ASN) is created upon the pallet status changes to PICKED which indicates the picking of stock from storage in the warehouse, and the placement of the product on the Warehouse floor ready to be loaded onto a vehicle.

The current process is that the PICKED pallets sit on the floor for 48 hours, as stated by the contractual agreements with Avarto.

The ASN provides delivery date, delivery location, delivery quantity and other delivery and equipment-related details. The Service Users typically access and review the ASNs an hour or two before delivery, or at the same time. The ASN is uploaded for the delivery to their warehouse or Third Party Logistics partner's systems so that they have visibility of the delivery.

Information relating to the ASN is an integral part of the billing systems. There are three separate Order Management Systems (Arqiva, TEF, DCC) relating to the pallets, which are not integrated. Information is shared between them as needed using CSV files. Any change to one system would need comparable changes in the other two systems.

DCC believes this change will have limited but far-reaching impact on each of the three Order Management Systems, but will have significant impacts on warehousing and storage facilities in relation to logistics and operations.

3.2 Technical Solution and Impact

All three of the Service Providers questioned the Problem Statement strongly. To summarise, the following statements caused the most concern:

"Suppliers must update Communication Hub asset data onto the password protected DCC Smart Meter Inventory (SMI); a process that cannot readily be automated"

and

"The minimum two-day notice period established in the SEC is, therefore, insufficient, in the Proposer's view, to reasonably allow the efficient processing of this data onto the SMI. This has led to an unacceptably high incidence of delivery refusals"

The Service Providers understanding of the process is:

- CSPs populate the SMI for Comms Hub Functions and Gas Proxy Functions (CHF/GPF), not the Service Users
- Service Users populate the SMI for meters etc.
- There's nothing additional that Service Users need to populate into the SMI re: CHFs pre Install & Configuration
- There is no linkage between the DSP SMI and the Service Users logistics systems (which seems to be the inference that SMI population challenges affect Service User delivery rejection)

There was even a question that suggested the DCC SMI is not password-protected, and that the Modification Request may be referencing another system.

All the Service Providers independently pointed out that the Service Users other than Scottish Power have not reported any problems with ASNs and the Order Management Systems.

On review of the planned change it was identified that the Order Management Systems and the process for SharePoint file generation might need to be altered to allow notifications to be issued according to different parameters. While this would not be high cost, the change would be complex to develop and test because the same changes would have to applied to three different systems.

There will be IT costs associated with a new warehouse as described in the following sections.

3.3 Logistics Impacts

Comms Hub stock is currently held in two warehouses across Great Britain.

While sitting in the loading bays, this stock is taking up space on the Warehouse floor. Depending on the size of the order this could range in size from one loading bay to five loading bays. This comes at a cost to the Warehouse.

In the 10 day scenario, SECMP0066 would require picking of stock up to 11 days before delivery and result in stock taking up space in loading bays for 10 days prior to collection. This would be effectively increasing the storage space in the warehouse by at least five times. Many Warehouses deal with a variety of different suppliers, shippers, and stock not just Comms Hubs, so this would be an unwelcome complication of working practices.

The CSPs cannot easily change the 2 day (48hour) ASN provision as it is built into contracts across the supply chain, so the contracts will need changing and renegotiating.

The CSP would need another warehouse to store the stock for the Service Users so that the ASN is picked, transported and stored for the extra days required by the Service User. To achieve this, the current Avarto Warehouse system will need changing to accommodate an

extra warehouse. The extra warehouse will require manning, a new system integrated with the Business Support Systems from both Arqiva and Telefonica. There would be impacts on CSP operations as the new warehouse would be a different site, additional transport between Avarto and new warehouse, additional handling of goods and products. The latter concerns would result in an increased risk of damage to the pallets and contents, which would need to be reflected in contracts, liability issues on product movements between warehouses, security issues, and environmental impacts but to name a few concerns.

3.3.1 Business Process

The standard business process associated with a 2-day ASN is as follows.

PROCESS	2 days
Picking = ASN	x
Prenotification	x
Scheduling and Delivery	x
Accept 5days	x
Reject	x
Collection	x
Storage/Quarantine	x
Holding period	x
redelivery (a - original)	x
redelivery (b - alternative)	x

The following additional steps would be required for an extended ASN timeline and are more complicated because the need for a second warehouse has a significant impact on the processes. The additional processes have been included in the setup costs considered following:

PROCESS	more than 2 days
Scheduling and Delivery	to new site
Relocate/ transport	new activity
Warehouse2 ISO27001	new activity
Additional equipment & manning (estimated)	new site
Holding period and charge	new activity
Reloading	new activity

The process of Rejection of a shipment at a new warehouse and the ensuing sub-processes were not considered in an attempt to simplify calculations.

3.3.2 Health and Safety Considerations

Extending the ASN poses a tangible health and safety risk in the Warehouses. Warehouse Health and Safety regulations state that a pallet may be in place on the Warehouse floor for no longer than two days. Changing this regulation would be a significant undertaking, and when viewed in light of the other objections to this Modification would most likely be rejected, or, at best, be very onerous to change.

3.3.3 Other Considerations

Customers can request a quote for a change of delivery location. If the ASN was to be extended, customers would be locked down to location and dates 11 days prior to a shipment, rather than two. Situations change and emergences happen this would make things a lot more difficult for customers to change items at short notice and or make it very expensive to do so.

4 Impacts on Systems, Processes, and People

4.1 Service Users

This SEC Modification is based on a proposal from Scottish Power to change the existing situation. Scottish Power are one of ten Service Users who would be affected by any changes. The worked estimates in the following sections show costs for implementing at one and all Service Users. However implementing this change would require approval from all the Service Users, Avarto, the CSPs, and all other parties involved in the logistics side of Comms Hub movement.

4.2 Contracts and Scope

A discussion held between Avarto and the CSPs identified that Avarto would unequivocally not accept such changes, and that it is outside of the scope agreed between these parties. In itself this is a significant barrier to any progression on this Modification.

This SEC Modification would require the existing contracts to be renegotiated. Whether the changes to contract reflected changes to one or all of the Service Users, the inherent costs and effort are likely to be very high. Costs for the contract changes for the Service Users, CSPs, and Avarto have been estimated at £125,000 per CSP, or a total of £250,000.

4.3 Health and Safety

Extending the ASN would pose a tangible health and safety risk in the Warehouses. Warehouse Health and Safety regulations state that a pallet may be in place on the Warehouse floor for no longer than two days. Changing this regulation would be a significant undertaking, and when viewed in light of the other objections to this Modification would most likely be rejected, or, at best, be very onerous to change.

5 Costs, Charges and Timescales

Extending the ASN from 2 to 10 days would significantly increase these shipping costs for example storage, warehouse space and administration fees, most likely by a factor of five for each shipment. Further loading bays would have to be built simply to accommodate these extended periods. This increase is probably linear in nature.

The set up cost for each CSP would be approximately £750,000. There are many reasons for this, as there would also be multiple challenges to overcome.

- Warehouse space is at a premium, partially driven by concerns about Brexit
- Minimum 10 year lease
- Security requirements
- Kitting out the warehouse
- IT Systems, including connecting to a network and warehouse cabling, updating Order Management Systems, and new PCs.
- Recruiting and training new staff
- Additional transport

In the following examples, the calculations are based on "here and now" levels of Comms Hub dispatch and expenditure, and are calculated on the basis of change for one Service User, Scottish Power, only. If all the Service Users were required to make this change, it would be safe to assume a cost of approximately 10 times the running costs stated following.

Costs associated with one pallet being moved to a new and separate warehouse five miles away have been derived as follows:

Receipt, Handling and Despatch (RHD)	£6.00
Shunting fee three times (off, on, + WH management) £3/pallet each time	£9.00
Pallet Storage	£30.00
Logistics 5 miles, 2 per week (0.22/mile)	£2.20
Lorry (22 pallets) cost per pallet	£0.10
TOTAL COST/Pallet	£45.10

In terms of the warehouse space required for the number of pallets, two calculations were made. The first set are based on current numbers of Comms Hub, the second set on the number expected when Comms Hub distribution is working at scale.

WAREHOUSE CALCULATIONS	76	£/sqFT	in Birmingham			
based on estimated volumes below	USER	2019	*October*	*November*	*December*	*January*
Warehouse space "sqFeet" pallets x 1.3	**SP**	sqFT	266	238	210	294
	current supply is at 20% capacity, at scale these figures will be greater					
	USER	2020	*October*	*November*	*December*	*January*
AT SCALE (2020) requirement	**SP**	sqFT	1,329	1,189	1,049	1,469
	USER	2020	*October*	*November*	*December*	*January*
AT SCALE Warehouse cost	**SP**	£	100,993	90,362	79,732	111,624

In the following calculations the Receipt Handing and Dispatch costs are shown for current and at scale volumes:

	2019	*October*	*November*	*December*	*January*
Scottish Power CH volumes	N	7168	5600	5600	6720
	C/S	10574	10952	8722	14100
£45/ pallet	**Pallets (space)**	**19**	**17**	**15**	**21**
	Spend	**£855**	**£765**	**£675**	**£945**
At Scale	2020	*October*	*November*	*December*	*January*
SP	Pallets/M	95	85	75	105
£45	/pallet	**£4,275**	**£3,825**	**£3,375**	**£4,725**

In summary, the costs associated with the extra warehousing for an at scale scenario are as follows.

SECMP0066 COSTING						
			October	*November*	*December*	*January*
AT SCALE Warehouse costs	**SP**	£	100,993	90,362	79,732	111,624
(Reciept, Handling & Despatch)	£45	/pallet	**£4,275**	**£3,825**	**£3,375**	**£4,725**

Finally the costs for setup and contract renegotiation are:

Set Up Fee estimated	TEF	£750,000
	ARQ	£750,000
Contractual changes estimated	TEF	£125,000
	ARQ	£125,000

5.1 Timescales

The lead time for building a new warehouse and implementing new business processes is difficult to estimate due to the many factors inherent in the process, but we would estimate from SEC approval through planning to completion of implementation of the new facilities would take at least three years. This would suggest these facilities would not come online until 2023, which is close to the expected completion of the rollout of Smart Meters.

5.2 Solution Notes

When reviewed with the top ten users, the nine of the 10 Service User companies using supplied Comms Hubs were comfortable with the current working agreements, and did not expect any changes to be made to the ASN process.

Health and Safety regulations and practices would have to be reviewed and reworked to cover the increased duration and warehouse capacities.

One CSP has indicated that they would prefer if the 2 day period was reduced to one day to reduce their costs and overheads for these shipments.

As described, we do not believe this Modification offers good value for money. We would recommend that the proposer should engage with the DCC Logistics team to discuss their ASN-linked processes, and to adopt the recommended best practices currently used by the other Service Users.

6 Appendix: Glossary

The table below provides definitions of the terms used in this document.

.Acronym	Definition
ASN	Advanced Shipment Notifications
CH, Comms Hubs	Communications Hubs
DCC	Data Communications Company
FIA	Full Impact Assessment
OMS	Order Management System
PIA	Preliminary Impact Assessment
SEC	Smart Energy Code
SMI	Smart Meter Inventory